Remarks

Entry of the amendments, reconsideration of the application and allowance of all claims are respectfully requested.

By this Amendment, claims 8 & 28 are canceled, claims 1, 5, 10, 18, 21, 22, 25, 30, 38, 41, 42, 47 & 50 are amended and new claims 50 & 51 are added to more particularly point out and distinctly claim the subject matter of the present invention. These amendments to the claims constitute a bona fide attempt by the applicants to advance prosecution of this application and obtain allowance of certain claims and are in no way meant to acquiesce to the substance of the outstanding rejections. It is believed that the amendments to the claims place all claims in condition for allowance. Claims 1-7, 9-27 & 29-52 are now pending.

In accordance with 37 C.F.R. 1.121(c)(1)(ii), a marked-up version of the amended claims is provided on one or more pages separate from the amendment. These pages are appended at the end of the Response.

The 35 U.S.C. §112, second paragraph, rejection to certain specified claims are respectfully traversed to any extent deemed applicable to the amended claims presented herewith. Each of the independent claims at issue has been amended to recite that the sharing of state information is through an intermediary application. Based on this

recitation, applicants respectfully request reconsideration and withdrawal of the rejections.

Applicants' claimed invention has been carefully reviewed in light of the Office Action in which claims 1-4, 6-7, 22-24, 26-27 and 42-46 were rejected under 35 U.S.C. § 102(a) as being anticipated by Rosenberg (WO 98/09447); claims 5, 8, 10, 11-17, 25, 28, 30-37 and 47-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosenberg in view of Davis et al. (U.S. Patent No. 5,796,952); claims 9 and 29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Susuki et al. (U.S. Patent No. 5,946,665); claims 20 and 40 were rejected under 35 U.S.C. 103(a) as being unpatentable over Giacoppo in view of Krick ("A cookie for your thoughts: cookies help Webmasters harness user habits. (Internet/Web/Online Service Information) (Tutorial)", Computer Shopper, v17, n7, p610(1)); claims 21 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Giacoppo in view of Davis et al; and claims 18-19, 38-39 and 50 were rejected under 35 U.S.C. § 103(a) as being obvious over Giacoppo ("Forum: comp.lang.java.announce, Thread: ad/soft/CheckOut - Shopping cart applet", http://www.deja.com, 8/8/97). For the reasons stated below, applicants respectfully traverse these rejections to any extent deemed applicable to the claims present herewith.

In accordance with an aspect of the present invention, a cross-domain sharing capability is provided in which state information is shared across **non-cooperating domains. That is, the domains have no knowledge of one another and do not**

directly communicate a proprietary protocol between one another. This language, which is expressly recited in many of the independent claims presented herewith, is in sharp contrast to the teachings of Rosenberg.

In addition, new claims 51 & 52 have been added to specify that "non-cooperating" domains means that the domains do not share a proprietary protocol. The claims also now recite that the non-cooperating domains share state information through an intermediary application, with the intermediary application determining the state information to be shared. As used in the present application, an intermediary application may be thought of as a proxy server through which a browser communicates with one or more domains. These amendments are presented in response to the Examiner's comments contained in the Office Action of May 30, 2001, and in particular, to the remarks at pages 24 & 25 thereof.

In Rosenberg, state information is shared across cooperating domains, and not across non-cooperating domains, as in applicants' invention. For instance, Rosenberg explicitly states on page 4, lines 30-31: "In particular, the technique of the invention allows all cooperating servers to share information via a database (emphasis added)." Further, on page 7, lines 1-2, Rosenberg explicitly states: "The present invention operates by having a group of related server computers, say server computers 24A-24N, cooperatively observe a common protocol... (emphasis added)." Further, on page 7, lines 7-9, it is stated: "That is, in accordance with the invention,

persistent client-side state (cookie) security features are avoided to allow <u>cooperating</u> server computers with distinct domain names to process state information associated with a browser (emphasis added)." Thus, it is clear from the reference that although the servers have distinct domain names, they are cooperating servers. **They are cooperating because they communicate a proprietary protocol between one another.** The proprietary protocol consists of generating, distributing, understanding and using, with the shared database, <u>the unique identifier value</u>.

With regard to the Examiner's comments contained at page 24 of the Response, applicants respectfully traverse the characterization that the "unique identifier value" presented in Rosenberg is in fact a common protocol such as would be necessary for the world wide web. This characterization is contrary to the express teachings of Rosenberg which teaches that the servers observe another level of proprietary protocol. This other level of proprietary protocol is above what would be referred to as common web protocol. Thus, in Rosenberg cooperating domains means that the domains directly communicate via a proprietary protocol between one another. The key to this proprietary protocol is referred to in Rosenberg as the "unique identifier value". Because Rosenberg describes this other level of proprietary protocol, and the use of a unique identification code therefore, the domains in Rosenberg are necessarily cooperating. Again, the Rosenberg patent itself defines these servers as cooperating in support of the concept that proprietary protocol is being exchanged between the servers.

Applicants' invention is distinct because no such cooperation or common and proprietary protocol is needed to share state information. This is what makes applicants' invention different. Thus, while in the past, cooperation was necessary, as the Office Action contends, applicants' invention changes that notion. Instead of cooperation among servers to share state information, applicants use, for example, an intermediary application between the client and the various servers, which is used to share the state information between the servers. This is shown clearly in FIG. 7a and FIG. 7b of applicants' specification where the userid and password used to logon the www.ibm.com server (step 730 of FIG. 7b) is shared with the private.lotus.com server (step 750 of FIG. 7b) <u>without either server knowing that the sharing is taking place</u>. When two servers use different protocols, the intermediary application converts the protocol of one server to the protocol of the second server before sharing the information. <u>This allows for the sharing of information between two servers simultaneously using different protocols</u>. Thus, in this aspect of applicants' claimed invention, the domains need not be and are not cooperating or using a common and proprietary protocol.

An advantage of the present invention can clearly be seen when considering the required steps to implement the two inventions. Rosenberg requires the servers to interpret the same cookies and write to a common database, therefore code must be installed at all of the servers to implement this functionality. For this aspect of the present invention, the servers remain unchanged. Rather, an

intermediary application is installed between the client and the servers. All of the functionality required to share the state information is contained in the intermediary application.

The Office Action states that Rosenberg teaches that a unique identification value is generated at the first domain (server) and then conveyed to each domain (server) that the client browser visits (page 7, lines 24-33 of Rosenberg). Clearly, Rosenberg fails to meet applicants' characterization of "non-cooperating domains" by this teaching since the domains will have express knowledge of each other through the unique identification value. Again, applicants define non-cooperating domains as both domains having (1) no knowledge of one another and (2) domains which do not directly communicate state information between one another. The express teachings of Rosenberg means that the domains described therein do not meet this characterization of applicants' claimed invention.

Based on the foregoing, applicants respectfully submit that independent claim 1 is not anticipated by Rosenberg. Further, independent claims 22 and 42 are patentable for the same reasons as independent claim 1. Additionally, the claims dependent from those independent claims are also patentable for the same reasons as their respective independent claim, as well as for their own additional features. Thus, applicants respectfully request an indication of allowability of claims 1-7, 9, 22-27, 29, and 42-46.

In a further aspect of applicants' invention, an intermediary application is used to provide state information to a client and/or a server. This intermediary application is coupled to the client and server, such that transmissions exchanged between the client and the server go through the intermediary application.

For example, a request being sent from a client application to a server application is received by an intermediary application. The intermediary application upon receiving the request, adds state information to the request, and then, forwards the request with the state information to the server application. Then, as a further example, the server application responds to the request and that response is received by the intermediary application. The intermediary application then forwards the response on to the client application. Thus, in this aspect of applicants' invention, the intermediary application acts as a middleman between the client and server.

One aspect of applicants' invention is recited in independent claim 10. Independent claim 10 recites a method of providing state information. The method includes, for instance, determining by an intermediary application state information to be provided to at least one of a client application (hereinafter client) and a server application (hereinafter server); and using the intermediary application, that is disposed to receive transmissions exchanged between the client and the server, to provide the state information to the at least one of the client and the server. Thus, in applicants' claimed invention, an

intermediary application is used to provide state
information and that intermediary application is disposed to
receive transmissions exchanged between the client and the
server. This is in sharp contrast to the teachings of
Rosenberg and Davis et al.

In particular, as explicitly stated in the Office
Action, Rosenberg fails to disclose sharing of information
using an intermediary application. Further, Davis et al.
does not overcome this deficiency of Rosenberg.
Specifically, Davis et al. describes a method and apparatus
for tracking client interaction with a network resource and
creating client profiles and a resource database. In order
to perform the tracking, a tracking program is used, which
is downloaded from a server to the client. That is, "[t]he
tracking program is downloaded from a server and runs on the
client to monitor various indicia, such as elapsed time,
mouse events, keyboard events, and the like...." (Column 4,
lines 45-48). In particular, the tracking program tracks
user interactions with a file, such as a web page, and
provides the information to the server. The tracking
program is not disposed between a client and a server to
receive transmissions exchanged between the client and the
server.

In response to a previous Office Action, applicants
submitted that while the tracking program provides
information to the server, the tracking program is <u>not</u> an
intermediary application <u>handling communications between a
client and a server</u>. That is, the tracking program of Davis
et al. is not in the communication path of the server and

client, and does not receive transmissions exchanged between
client and server programs.

In response to this argument, a prior Office Action
interprets Figure 5 as disclosing Server A as the client,
Client as the intermediary application, and Server B as the
server. Applicants respectfully submit that this is not
what is shown in Figure 5, and any interpretation as such is
a misinterpretation of Davis et al.

> In describing the figure, Davis et al. state that:
> Thus, <u>the client first issues a TCP/IP request</u>
> (S501). After a handshaking period, a first
> Server A begins to send an HTML formatted document
> which contains an embedded URL referencing the
> tracking program. <u>The client additionally issues</u>
> <u>a TCP/IP request to a second Server B</u> referenced
> by the embedded URL in order to obtain the
> tracking program (S502B)... When the tracking
> program has been obtained, the client process
> (i.e. the Web browser) saves the tracking program
> to RAM (S503B)... When the user performs another
> predetermined action (S505), the tracking program
> calculates the amount of time between the
> predetermined user actions, and sends this
> information, along with other available client
> information, to the server.

Col. 13, lines 24-26 (emphasis added).

This discussion clearly states that the Figure shows
the client as initiating communications with both Server A
and Server B. Server A does not communicate with Server B
through client as maintained in the final Office Action.
Additionally, the discussion of the tracking program reveals
that it does not act as an intermediary between client and
either of the Servers, but rather initiates its own,

independent communications with one of the servers, as previously submitted by applicants. Thus, applicants' claimed intermediary application is very different from the tracking program of Davis et al.

At pages 24 & 25 of the Office Action of May 30, 2001, it is alleged that Davis teaches client information as captured and transmitted to a second server (FIG. 6, items (607A)), and therefore that applicants' recitation is met. This characterization of the teachings of Davis is respectfully traversed for the above-noted reasons. Specifically, the client transfers information directly to the server in Davis, there is no intermediary application disposed in a communication path as is the case with applicants' intermediary application. For this reason, applicants respectfully request reconsideration of the applicability of the Davis patent to the teachings of the recited invention. In applicants' invention, the phrase "intermediary application" means that all communications between the client and server pass through the intermediary application, i.e., the client does not directly communicate with the server. Such a system is clearly lacking from the teachings of the applied patents.

Since the tracking program of Davis et al. is not disposed to receive transmissions exchanged between the client and the server, but instead simply monitors the user's interaction (e.g., keyboard presses, mouse clicks) with the client, Davis et al. does not teach or suggest applicants' claimed invention. Further, since Rosenberg and Davis et al. fail to describe an intermediary application at

all, the combination of Rosenberg and Davis et al. fails to teach or suggest applicants' claimed invention. Based on the foregoing, applicants respectfully submit that independent claim 10, as well as independent claims 30 and 47, are patentable over the combination of Rosenberg and Davis et al. Additionally, the claims dependent from these independent claims are also patentable over the combination. Therefore, applicants respectfully request an indication of allowability of claims 10-17, 30-37, and 47-49.

A further aspect of applicants' claimed invention is related to a virtual on-line shopping mall. A purchaser selects items from different vendors and those items are added to a single shopping cart, such that the purchaser only has to check out once. However, the purchaser is relieved from some of the actions that would typically take place in such a purchase. For example, the purchaser need not provide to a vendor the items purchased at another vendor. Instead, this task is taken care of by, for example, an intermediary application. For instance, the intermediary application (e.g., a proxy server) is in charge of placing the selected items in a shopping cart and thus, relieves the purchaser of the burden of explicitly forwarding the list of items to be purchased between the different vendors.

In one example, applicants' claim 18 states a method of electronic shopping, which includes, for instance, selecting, by a purchaser, a plurality of items to be purchased electronically from a plurality of vendors, wherein the plurality of vendors are represented by a

plurality of web sites; and purchasing the plurality of
items on-line via a single checkout, wherein an indication
of the items to be purchased need not be moved, by the
purchaser, between the plurality of vendors. Thus, in
applicants' claimed invention, the purchasers are relieved
from the task of explicitly forwarding a list of the items
to be purchased between the vendors. Instead, this task is
handled by another entity, such as an intermediary
application.

In addition, claim 18 is amended herein to recite that
the plurality of vendors comprise a plurality of non-
cooperating domains, wherein the non-cooperating domains
have no knowledge of one another and wherein the non-
cooperating domains do not directly communicate state
information between one another. Thus, applicants believe
that this claim is allowable for the same reasons stated
initially herein with respect to claim 1.

In contrast to applicants' claimed invention, the
Giacoppo reference specifically teaches that the shoppers
need to take their orders to other checkout stores if
wanting to purchase multiple items from different stores at
one checkout. Thus, the shoppers are straddled with the
task of providing this list from one vendor to the other.
In one aspect of applicants' invention, the purchaser is
relieved of this task, and instead the intermediary
application, moves the list between the vendors. Further, a
careful reading of Giacoppo fails to uncover any discussion
that the plurality of vendors comprise a plurality of non-
cooperating domains as now expressly recited by applicants.

Again, non-cooperating domains are recited to comprise domains having no knowledge of one another <u>and</u> wherein the non-cooperating domains do not directly communicate state information between one another, but rather share state information via an intermediary application.

Applicants respectfully submit that there is no teaching in the Giacoppo reference of anything other than specifically requiring the users to explicitly move their order list from store to store. It is specifically stated in Giacoppo:

> Vendors can also create a networked mall where <u>shoppers can take their Order List</u> to other CheckOut! stores on the same server or across the Internet to other servers running CheckOut! while keeping their Order List intact. (emphasis added)
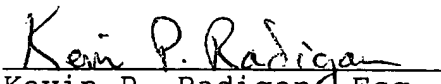
This language specifically states that the order lists need to be brought from store to store by the shoppers. In contrast, applicants' invention does not require such explicit action by the users; and to state in the Office Action that it is inherent to use an intermediary application, as applicants have taught, is an improper hindsight reconstruction based on applicants' invention.

Since Giacoppo fails to describe applicants' claimed feature of purchasing a plurality of items on-line via single checkout, wherein an indication of the plurality of items to be purchased need not be moved by the purchaser between the plurality of vendors, applicants respectfully

submit that Giacoppo does not teach applicants' claimed invention. Further, there is no teaching or suggestion of how CheckOut! (described in the reference) would relieve the shoppers of this task. Thus, applicants respectfully submit that their invention is patentable over the Giacoppo reference and request an indication of allowability of claims 18-21, 38-41 and 50.

In view of the above, allowance of all claims presented herewith is respectfully requested. If, however, any issue remains unresolved, the Examiner is urged to telephone applicants' undersigned representative to further discuss the application.

Respectfully submitted,

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Marked-Up Version of Claims

1.   (Twice Amended) A method of sharing state information, said method comprising:

determining by an intermediary application state information to be shared between a first domain and a second domain; and

sharing said state information between said first domain and said second domain, wherein said first domain and said second domain are non-cooperating domains, said non-cooperating domains having no knowledge of one another and wherein said non-cooperating domains do not directly communicate state information between one another, said sharing of state information being through the intermediary application.

5.   (Amended) The method of claim 4, wherein said sharing further comprises receiving, by the [an] intermediary application, said request from a client prior to said adding, and wherein said adding and said sending are performed by said intermediary application.

8.   Cancel.

10.   (Amended) A method of providing state information, said method comprising:

determining <u>by an intermediary application</u> state information to be provided to at least one of a client application (client) and a server application (server); and

using <u>the</u> [an] intermediary application, that is disposed to receive transmissions exchanged between said client and said server, to provide said state information to said at least one of said client and said server.

18.   (Thrice Amended)   A method of electronic shopping, said method comprising:

selecting, by a purchaser, a plurality of items to be purchased electronically from a plurality of vendors, said plurality of vendors comprising a plurality of non-cooperating domains, said non-cooperating domains having no knowledge of one another and wherein said non-cooperating domains do not directly communicate state information between one another<u>, but share state information through an intermediary application</u>; and

purchasing said plurality of items on-line via a single check out, wherein an indication of said plurality of items to be purchased need not be moved, by said purchaser, between said plurality of vendors.

21. (Amended) The method of claim 19, wherein said placing is controlled by the [an] intermediary application coupled to said vendors [web sites].

22. (Twice Amended) A system of sharing state information, said system comprising:

means for determining by an intermediary application state information to be shared between a first domain and a second domain; and

means for sharing said state information between said first domain and said second domain, wherein said first domain and said second domain are non-cooperating domains, said non-cooperating domains having no knowledge of one another and wherein said non-cooperating domains do not directly communicate state information between one another, said means for sharing employing the intermediary application in sharing said state information between said first domain and said second domain.

25. (Amended) The system of claim 24, wherein the [further comprising an] intermediary application is adapted to receive said request from a client prior to said adding, and adapted to add said state information to said request and to send said request.

28. Cancel.

30.   (Amended)   A system of providing state
information, said system comprising:

means for determining by an intermediary
application state information to be provided to at
least one of a client application (client) and a server
application (server); and

an intermediary application, that is disposed to
receive transmissions exchanged between said client and
said server, adapted to provide said state information
to said at least one of said client and said server.

38.   (Thrice Amended)   A system of electronic shopping,
said system comprising:

means for selecting, by a purchaser, a plurality
of items to be purchased electronically from a
plurality of vendors, said plurality of vendors
comprising a plurality of non-cooperating domains, said
non-cooperating domains having no knowledge of one
another and wherein said non-cooperating domains do not
directly communicate state information between one
another, but share state information through an
intermediary application; and

means for purchasing said plurality of items on-line via a single check out, wherein an indication of said plurality of items to be purchased need not be moved, by said purchaser, between said plurality of vendors.

41.   (Amended)   The system of claim 39, <u>wherein the</u> [further comprising an] intermediary application <u>is</u> coupled to said plurality of <u>vendors</u> [web sites], said intermediary application adapted to associate said selected plurality of items with said shared shopping cart.

42.   (Twice Amended)   An article of manufacture, comprising:

at least one computer useable medium having computer readable program code means embodied therein for causing the sharing of state information, the computer readable program code means in said article of manufacture comprising:

computer readable program code means for causing a computer to determine <u>by an intermediary application</u> state information to be shared between a first domain and a second domain; and

computer readable program code means for causing a computer to share said state information between said first domain and said second domain, wherein said first domain and said second domain are non-cooperating domains, said non-cooperating domains having no knowledge of one another and wherein said non-cooperating domains do not directly communicate state information between one another, <u>said sharing of state information being through the intermediary application</u>.

47.   (Amended) An article of manufacture, comprising:

at least one computer useable medium having computer readable program code means embodied therein for causing the providing of state information, the computer readable program code means in said article of manufacture comprising:

computer readable program code means for causing a computer to determine <u>by an intermediary application</u> state information to be provided to at least one of a client application (client) and a server application (server); and

computer readable program code means for causing a computer to use an intermediary application, that is disposed to receive transmissions exchanged between said client and

said server, to provide said state information to said at least one of said client and said server.

50. (Thrice Amended) At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of electronic shopping, said method comprising:

selecting, by a purchaser, a plurality of items to be purchased electronically from a plurality of vendors, said plurality of vendors comprising a plurality of non-cooperating domains, said non-cooperating domains having no knowledge of one another and wherein said non-cooperating domains do not directly communicate state information between one another, but share state information through an intermediary application; and

purchasing said plurality of items on-line via a single check out, wherein an indication of said plurality of items to be purchased need not be moved, by said purchaser, between said plurality of vendors.

51. (New) The method of claim 1, wherein said non-cooperating domains do not share a proprietary protocol.

52. (New) The system of claim 22, wherein said non-cooperating domains do not share a proprietary protocol.